DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	BAYBERRY POND	Lake Area (ha):	6.07
Town:	KINGSTON	Maximum depth (m):	3.4
County:	Rockingham	Mean depth (m):	1.5
River Basin:	Merrimack	Volume (m^3):	104500
Latitude:	42°52'40" N	Relative depth:	1.1
Longitude:	71°05'12" W	Shore configuration:	1.06
Elevation (ft):	130	Areal water load (m/yr):	5.67
Shore length (m):	1000	Flushing rate (yr^{-1}):	3.90
Watershed area (ha):	85.0	P retention coeff.:	0.64
% watershed ponded:	0.0	Lake type:	natural

BIOLOGICAL:		20 February 2003	15 July 2002
DOM. PHYTOPLANKTON (% TOTAL)	#1	OSCILLATORIA 80%	CERATIUM 55%
	#2		RHIZOSOLENIA 22%
	#3		DINOBRYON 18%
PHYTOPLANKTON ABUNDANCE (units/mL)			
CHLOROPHYLL-A (µg/L)			
DOM. ZOOPLANKTON (% TOTAL)	#1	DAPHNIA 29%	CONOCHILUS 34%
	#2	KERATELLA 21%	NAUPLIUS LARVA 20%
	#3	CALANOID COPEPOD 21%	KERATELLA 14%
ROTIFERS/LITER		56	419
MICROCRUSTACEA/LITER		145	305
ZOOPLANKTON ABUNDANCE (#/L)		226	837
VASCULAR PLANT ABUNDANCE			Abundant
SECCHI DISK TRANSPARENCY (m)			1.9
BOTTOM DISSOLVED OXYGEN (mg/L)		0.7	0.5
BACTERIA (E. coli, #/100 ml)	#1		4
	#2		
	#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m): None
Hypolimnion volume (m^3) : None
Anoxic volume (m^3) : 1000

CHEMICAL:

Lake: BAYBERRY POND
Town: KINGSTON

	20 February 2003		15 July 2002		
DEPTH (m)	1.0	2.0	1.0		2.0
pH (units)	6.1	6.3	7.1		7.0
A.N.C. (Alkalinity)	19.7	21.9	17.8		17.8
NITRATE NITROGEN	< 0.05	0.05	< 0.05		< 0.05
TOTAL KJELDAHL NITROGEN			0.50		0.50
TOTAL PHOSPHORUS	0.022	0.027	0.014		0.016
CONDUCTIVITY (µmhos/cm)	355.0	374.0	290.0		288.0
APPARENT COLOR (cpu)	60	60	55		65
MAGNESIUM			2.53		
CALCIUM			11.2		
SODIUM			35.2		
POTASSIUM			2.13		
CHLORIDE	84	88	71		72
SULFATE	10	10	8		7
TN : TP			36		31
CALCITE SATURATION INDEX			1.9		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 2002

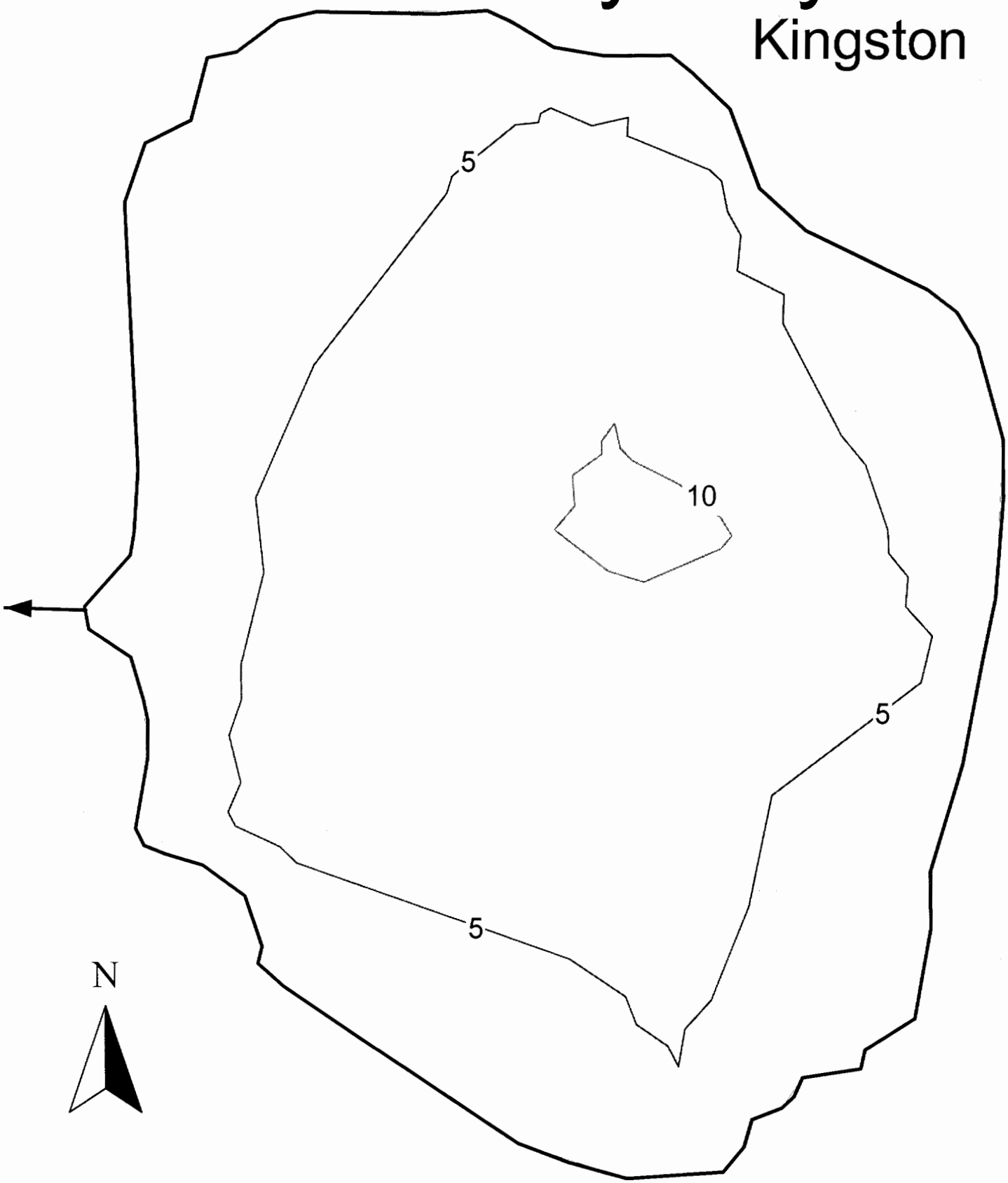
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	4	5	**	**	Eutro.

COMMENTS:

1. aka Cedar Pond
2. No access; canoe was carried down a rough, overgrown trail and launched through a dense bed of macrophyte growth.
3. This is a tea-colored but non-acidic eutrophic pond. Elevated cations (Ca, Mg, Na, K), chloride and conductivity values suggest road salt and urban runoff to the pond.
4. No chlorophyll result was obtained. For classification purposes, the chlorophyll was estimated to be at least 4 ug/L (based on the high zooplankton count); this would give it at least one more trophic point and 10 points place it in the eutrophic category.
5. The dissolved oxygen at the bottom in the winter was depleted; this suggests a very organic bottom sediment (only 3% of NH ponds have a bottom DO in winter of less than 1 mg/L).

Bayberry Pond

Kingston



5 foot depth contours

FIELD DATA SHEET

LAKE: BAYBERRY POND
DATE: 07/15/2002

TOWN: KINGSTON
WEATHER: Hazy, hot & humid; lt. breeze

	DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
	0.1	26.5	7.1	88 %
	1.0	25.2	6.4	77 %
	2.0	22.4	7.8	90 %
	3.0	17.6	0.5	5 %

SECCHI DISK (m): 1.9
BOTTOM DEPTH (m): 3.4
TIME: 1130

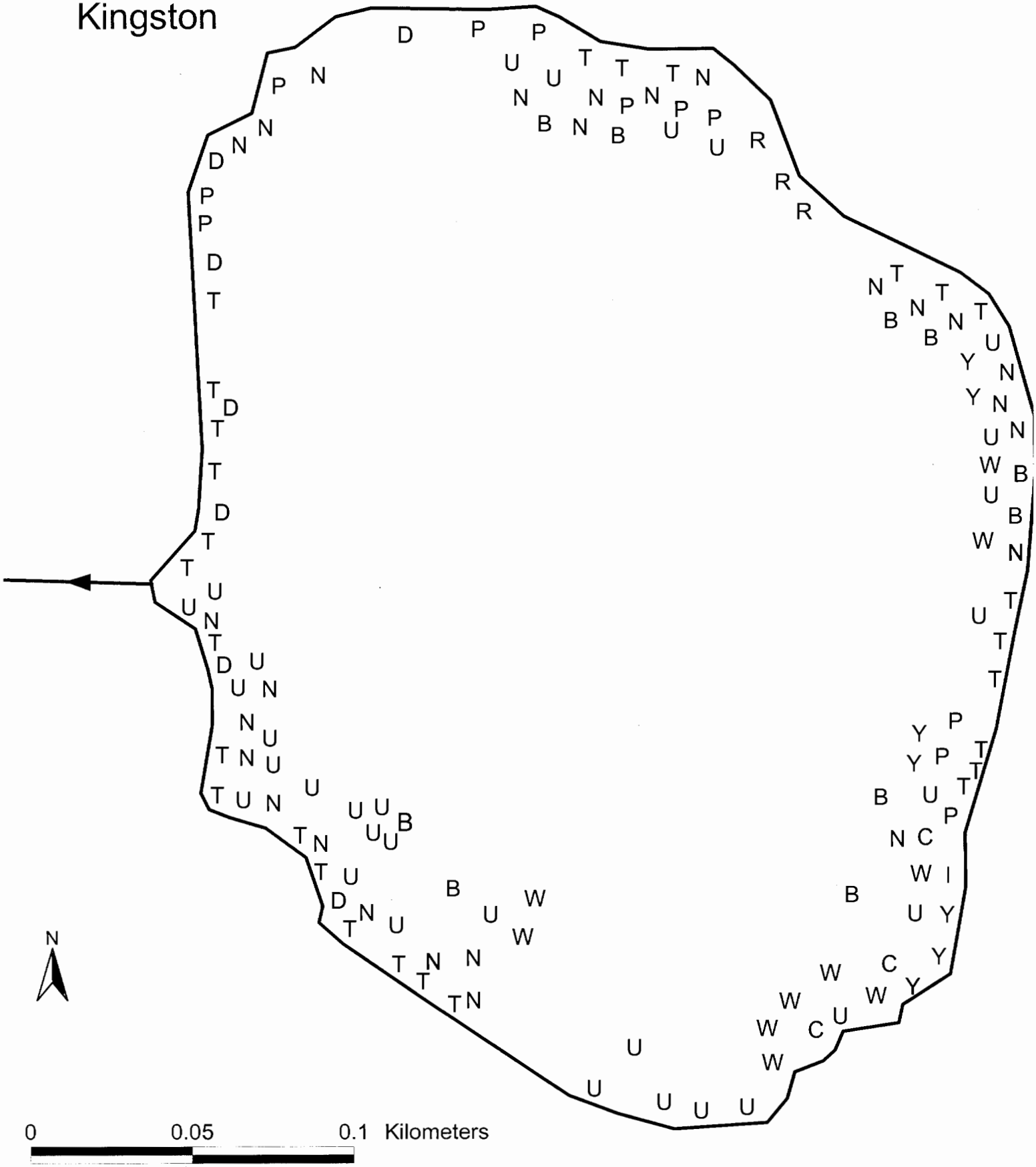
COMMENTS:

No thermocline was present but a layer of anoxic, somewhat colder water was present at the very bottom.

*Dissolved oxygen values are in mg/L

Bayberry Pond

Kingston



AQUATIC PLANT SURVEY

LAKE: BAYBERRY POND TOWN: KINGSTON DATE: 07/15/2002

Key	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
T	Typha	Cattail	Common
N	Nymphaea	White water lily	Common/Abun
U	Utricularia	Bladderwort	Abundant
Y	Nuphar	Yellow water lily	Common
B	Brasenia schreberi	Water shield	Common
W	Potamogeton	Pondweed	Common
C	Cyperaceae	Non-flowering sedge	Scattered
I	Iris versicolor	Blue flag	Sparse
P	Pontederia cordata	Pickerelweed	Scat/Common
R	Phragmites australis	Common reed	Scattered
D	Decodon verticillatus	Swamp loosestrife	Scattered

OVERALL ABUNDANCE: Abundant

GENERAL OBSERVATIONS:

1. Only one house was located on shore – and another three set back from the shore – but the water quality was typical of an urban pond.
2. *Oscillatoria* (a nuisance blue-green algae) was a strong dominant during the winter but was not abundant.
3. Bottom dissolved oxygen was depleted during the winter sampling. This is not a common occurrence in NH lakes; it was probably due to a very organic bottom sediment exerting a D.O. demand and the shallow water depth.